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CLAIMS

1. A filament cutout circuit for a fluorescent lamp (60), comprising:
a filament transformer (20) including a primary winding (22) and at least one secondary winding (24, 26, 28); and
a cutout transistor (30) serially connected to the primary winding (22); wherein the secondary winding (24, 26, 28) provides a filament voltage to at least one filament (62, 64) in the fluorescent lamp (60) and wherein a filament control input (12) turns on the cutout transistor (30) for a predetermined time period to preheat the filament (62, 64).
2. The circuit of claim 1 wherein the cutout transistor (30) comprises a power metal-oxide-semiconductor field-effect transistor.
3. The circuit of claim 1 wherein the at least one secondary winding (24, 26) comprises a first secondary winding (24) connected to a first filament (62) of the fluorescent lamp (60) and a second secondary winding (26) connected to a second filament (64) of the fluorescent lamp (60).
4. The circuit of claim 1 wherein the at least one secondary winding (24, 26, 28) comprises a first secondary winding (24) connected to a first filament (62a) of a first fluorescent lamp (60a), a second secondary winding (26) connected to a second filament (64b) of a second fluorescent lamp (60b), and a third secondary winding (28) connected to a second filament (64a) of the first fluorescent lamp (60a) and a first filament (62b) of the second fluorescent lamp (60b).
5. The circuit of claim 4 wherein the third secondary winding (28) is connected to the second filament (64a) of the first fluorescent lamp (60a) and the first filament (62b) of the second fluorescent lamp (60b) in one of a series filament configuration or a parallel filament configuration.

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6. The circuit of claim 1 further comprising:
a cutout-transistor biasing network (40) electrically connected to the cutout transistor (30).
7. The circuit of claim 6 wherein the cutout-transistor biasing network (40) consists of a bias resistor (42) connected between the filament control input (12) and a gate electrode (32) of the cutout transistor (30), and a bias capacitor (44) connected between the gate electrode (32) and a source electrode (34) of the cutout transistor (30).
8. The circuit of claim 1 further comprising:
an interval timing circuit electrically connected to the cutout transistor (30), the interval timing circuit providing a filament control signal to the filament control input (12).
9. The circuit of claim 1 further comprising:
a blocking capacitor (50), wherein the blocking capacitor (50) is serially connected between a switching power-supply input (16) and the primary winding (22) of the filament transformer (20).
10. An electronic ballast for a fluorescent lamp (60) comprising:
a filament transformer (20) including a primary winding (22) and at least one secondary winding (24, 26, 28);
a cutout transistor (30) serially connected to the primary winding (22); and
a fluorescent-lamp controller (66) electrically connected to the cutout transistor (30); wherein the secondary winding (24, 26, 28) provides a filament voltage to at least one filament (62, 64) in the fluorescent lamp (60) and wherein the fluorescent-lamp controller (66) sends a filament control signal that turns on the cutout transistor (30) for a predetermined time period to preheat the filament (62, 64).
11. The electronic ballast of claim 10 wherein the cutout transistor (30) comprises a power metal-oxide-semiconductor field-effect transistor.

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12. The electronic ballast of claim 10 wherein the at least one secondary winding (24, 26) comprises a first secondary winding (24) connected to a first filament (62) of the fluorescent lamp (60) and a second secondary winding (26) connected to a second filament (64) of the fluorescent lamp (60).

13. The electronic ballast of claim 10 wherein the at least one secondary winding (24, 26, 28) comprises a first secondary winding (24) connected to a first filament (62a) of a first fluorescent lamp (60a), a second secondary winding (26) connected to a second filament (64b) of a second fluorescent lamp (60b), and a third secondary winding (28) connected to a second filament (64a) of the first fluorescent lamp (60a) and a first filament (62b) of the second fluorescent lamp (60b).

14. The electronic ballast of claim 13 wherein the third secondary winding (28) is connected to the second filament (64a) of the first fluorescent lamp (60a) and the first filament (62b) of the second fluorescent lamp (60b) in one of a series filament configuration or a parallel filament configuration.

15. The electronic ballast of claim 10 further comprising:
a cutout-transistor biasing network (40) electrically connected to the cutout transistor (30).

16. The electronic ballast of claim 15 wherein the cutout-transistor biasing network (40) consists of a bias resistor (42) connected between the filament control input (12) and a gate electrode (32) of the cutout transistor (30), and a bias capacitor (44) connected between the gate electrode (32) and a source electrode (34) of the cutout transistor (30).

17. The electronic ballast of claim 10 further comprising:
a blocking capacitor (50), wherein the blocking capacitor (50) is serially connected between a switching power-supply input (16) and the primary winding (22) of the filament transformer (20).

18. A method of operating a fluorescent lamp (60), comprising:
receiving a filament control signal;

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generating a filament voltage responsive to the filament control signal;
maintaining the filament voltage for a predetermined time period sufficient to heat at least one filament (62, 64) in the fluorescent lamp (60) prior to igniting the fluorescent lamp (60); and
reducing the filament voltage upon expiration of the predetermined time period.

19. The method of claim 18 wherein the filament control signal is received from an interval timing circuit.

20. The method of claim 18 wherein the filament control signal is received from a fluorescent-lamp controller (66).